

NASA Hurricane  
And Severe  
Storm Sentinel

HS3

# NASA HS3 *An airborne mission to investigate hurricane formation and intensity change*

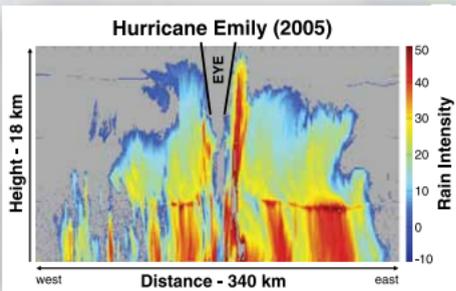
National Aeronautics and  
Space Administration



Visible image of Hurricane Katrina

The Hurricane and Severe Storm Sentinel, or HS3, mission will overfly tropical storms and hurricanes using NASA's Global Hawk Unmanned Aircraft Systems (UAS) in the Northern Atlantic, Caribbean, and Gulf of Mexico. These flights will improve our understanding of the processes that lead to the development of intense hurricanes. The mission will take place for one-month periods during the 2012, 2013, and 2014 Atlantic Basin hurricane seasons.

HS3 will use two of NASA's Global Hawks, each equipped with state-of-the-art science instruments. One aircraft will monitor the environment around storms to look for conditions favorable for storm formation and intensification. The other aircraft will repeatedly fly directly over storms to collect data on the inner-core structures that lead to storm intensity change.



Example of aircraft data  
to be collected during HS3

The Global Hawk is a robotic plane that can fly to an altitude of 19.8 km (12.3 miles)—roughly twice as high as a commercial airliner—as far as 20,278 km (12,600 miles), and for as long as 28 hours. The Global Hawks provide a new and unique capability for collecting continuous, high-resolution measurements that will be crucial to understanding rapidly evolving processes in hurricanes.

To learn more about HS3, visit: [www.nasa.gov/HS3](http://www.nasa.gov/HS3)

*Image on the front:* As Hurricane Katrina crossed the Gulf of Mexico, NASA's TRMM satellite observed its clouds and rainfall, including this dramatic 3-D view of the storm's precipitation structure. During HS3, NASA's Global Hawks will be used to collect more complete information on the storm's structure and environment, gaining valuable information about how and why such intense storms form.